Home Newsfront

ALTERNATE WAYS TO BLOCK FIRE

Fire-retardant treated (FRT) plywood roof sheathing is failing in thousands of homes east of the Mississippi—a victim of the high heat and humidity found in attics ["HFN," Jan. '90]. Two new products now offer alternatives.

Like the FRT plywood substitute made by Weyerhaeuser ["HFN," Aug. '91; "Best of What's New," Dec. '91], Safecoat is a coating on lumber. Made by Marathon Coatings Technology of Edmonton, Alberta, the latex-based coating seals wood against destructive moisture. The coated wood forms a protective char when temperatures reach about 570°F. The char keeps heat from reaching the wood and cuts off its oxygen supply to further prevent ignition until 1,400°F. Safecoat is now available in Canada and the United States.

The second product, Fire Preventer, is lumber treated with a nontoxic water-based solution. When heat is applied to Fire Preventer lumber, the treatment compounds embedded in the wood fibers chemically alter potential combustible gases so that they won't burn until temperatures reach 1,000°F. The chemical treatment for Fire Preventer differs in one crucial aspect from the process to make FRT plywood, says Nochar, the Indianapolis-based manufacturer: It is not conducted under pressure. Using pressure to impregnate wood with chemicals is thought to be a contributing factor in the weakening of FRT plywood, says Daniel Goetzenius, president of Nochar. Both products are under consideration for approval by major U.S. building-code organizations.—Suzanne Kantra

In the photo sequence above, once the flame reaches the area protected by latex-based Safecoat, a char prevents the fire from spreading.

Tabeya, also of Matsushita's home automation division. The company plans to build control capabilities into appliances, doing away with the adapters. It also foresees subnetworks connecting, for example, the appliances in a kitchen or a home's audio and video equipment. Matsushita is working with Philips N.V. of the Netherlands to adapt the Domestic Digital Bus (D2B)—a communications and control protocol—to link audio, video, and related consumer products within the Matsushita system.

Tabeya also says the company is working with Japanese industry groups to develop a comprehensive standard to ensure the compatibility of products from different manufacturers; this home bus, however, is years away, according to Tabeya.

Meanwhile, the proposed TRON system has not advanced ["The World's Smartest Houses," Sept. '90]. While the TRON smart house has been praised as a demonstration of future possibilities, it has drawn little commercial interest thus far.—Dennis Normile

Radiant-barrier paint

Hung in attics, metal foils and metalized plastic films reduce radiant heat flow into or out of a home, saving energy. Now there's a silver-colored paint that does almost as good a job.

LO/MIT-I, a silicone-based paint that reflects heat, was used in the National Association of Home Builders Research Center's Lifestyle 2000 demonstration house ["HFN," March; "Concrete Blocks Grow Up," June '91]. "The paint is 90 percent as efficient as standard foil barriers," asserts Robert Aresty of the Solar Energy Corp. Typical foil barriers have an emissivity of 0.15 to 0.05—that is, they stop 85 to 95 percent of incoming heat energy. In comparison, LO/MIT-I's emissivity is 0.24, says Aresty.

This claim was recently borne out in independent tests conducted by the Florida Solar Energy Center in Cape Canaveral. Researchers subjected the coating to "hot-box" tests that simulate summer rooftop conditions. The emissivity of LO/MIT-I was found to be 0.25 to 0.22, according to the report.

Sprayed on the bottom side of the roof deck, LO/MIT-I can reduce attic temperatures by 10°F to 25°F, which in turn lowers air-conditioning costs by 8 to 12 percent, claims Aresty. In winter, LO/MIT-I blocks heat from rising through the ceiling, cutting heating bills by 1 to 2 percent.

It costs 10 to 15 cents per foot to coat a surface with LO/MIT-I, which is applied like conventional paint. That cost is competitive with installing other radiant barriers, says Aresty. Because the solvent-borne paint must be applied with adequate ventilation, it's not recommended for existing attic structures—only for new construction.

But "as a roof coating, it can be applied in any circumstances," says Aresty. In addition to home and building applications, LO/MIT-I also works as a heat shield for components in aircraft and automobiles. Solar Energy Corp., Box 3065, Princeton, N.J. 08543-3065.

Notes from home

- In its most recent calculations of costs of various energy sources, the Department of Energy has found natural gas to be the least expensive. Natural gas costs an average of $6.05 per million Btu. The other four, from least to most expensive, are: kerosene, at $7.56 per million Btu; No. 2 heating oil, at $9.30; propane, at $9.74; and electricity, at $24.15.

- The National Renewable Energy Laboratory in Golden, Colo., has licensed its compact-vacuum-insulation technology to Science Applications International Corp. of San Diego for commercial development. The insulation consists of two hermetically welded thin metal plates separated by a series of supports. A 0.1-inch-thick compact-vacuum-insulation panel performs as well as more than an inch of conventional foam, so refrigerators and other systems can be smaller and use less energy.

- The Consumer Product Safety Commission has documented the deaths of 48 children since 1982 who were trapped under garage doors with automatic openers. A free self-adhesive safety label and brochure that describes how to teach children about garage-door safety is available by calling 800-727-2338.